

Patent claims

1. A method for storing data on a bulk memory using a computer system, which computer system supplies the data to the bulk memory for storage on the basis of the rules of a file system, which bulk memory is of the random access type, in which the data are organized in data blocks (1, 2, 3), where the data blocks are provided for storage on the bulk memory on the basis of the rules of a file system on a computer system supplying the data, where the data blocks contain organization information (21, 31, 22, 32, 23, 33), arranged at the start and end of a data block, for managing the data blocks and contain the user information which is to be stored, where cohesive user information areas (11, 12, 13) can be distributed over a plurality of data blocks which are then concatenated to one another using their organization information, where the related user information in one or more data blocks is separated from the organization information and is continuously compiled (10) and, in a subsequent step, compressed (K) using a data compression method, whereupon the compressed volume of data obtained in this manner is split into individual compressed-data packets (41, 42) preselected in terms of their data length, where the compressed-data packets are stored in compressed-data blocks with organization information (21, 31, 22, 32) for management on the bulk memory, organized on the basis of the rules of the file system on the computer system delivering the data, where a plurality of related compressed-data blocks are stored on the bulk memory with cohesive compressed data, distributed over a plurality of compressed-data blocks concatenated to one another using their organization information.

2. A method for storing data on a bulk memory using a computer system, which computer system supplies the

data to the bulk memory for storage on the basis of the rules of a file system, which bulk memory is of the random access type, in which the data are organized in data blocks, where the data blocks are provided for storage on the bulk memory on the basis of the rules of a file system on a computer system delivering the data, where the data blocks contain organization information, arranged at the start and end of a data block, for managing the data blocks and contain the user information which is to be stored, where cohesive user information areas can be distributed over a plurality of data blocks which are then concatenated to one another using their organization information, where the data blocks, which are possibly concatenated to one another using their organization information, are continuously compressed using a data compression method to form a compressed volume of data on the basis of the concatenation before they are stored on the bulk memory, and the compressed volume of data obtained in this manner is split into individual compressed-data packets preselected in terms of their data length, where the compressed-data packets are stored on the bulk memory in compressed-data blocks with organization information for management, where a plurality of related compressed-data blocks are stored on the bulk memory with cohesive compressed data, distributed over a plurality of compressed-data blocks concatenated to one another using their organization information.

3. The method for storing data on a bulk memory as claimed in claim 1 or 2, wherein the data compression method used is a Huffmann, 1-Byterun, LhA, ZIP or RAR method.

4. The method for storing data on a bulk memory as claimed in one of claims 1 to 3, wherein

the data compression method is stored in a programmable program store provided for this purpose.

5. The method for storing data on a bulk memory as
5 claimed in one of claims 1 to 4,
wherein
the data blocks provided by the computer system for
storage on the bulk memory are first buffer-stored in a
write memory.

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6. The method for storing data on a bulk memory as
claimed in one of claims 1 to 5,
wherein
the organization information is start, end and
15 concatenation information (block pointer).

7. The method for storing data on a bulk memory as
claimed in one of claims 1 to 6,
wherein
20 the compressed-data blocks have the same structure as
the data blocks in the file system.

8. The method for storing data on a bulk memory as
claimed in one of claims 1 to 7,
25 wherein
the bulk memory has a table holding information about
the bulk memory's utilization by data blocks, this
table being modified following use of the data
compression method and storing on the [lacuna] data
30 blocks with the compressed user information, or the
compressed-data blocks [lacuna] the bulk memory being
modified in line with their new length and/or number
and/or memory position.

35 9. The method for storing data on a bulk memory as
claimed in one of claims 1 to 8,
wherein
the data blocks have fixed lengths of 1024 bytes or a

multiple thereof.

10. The method for storing data on a bulk memory as claimed in one of claims 1 to 9,

5 wherein

the bulk memory is a hard disk.

11. A method for reading data from a bulk memory (60) using a computer system (51), which computer system
10 accesses the stored data in the bulk memory on the basis of the rules of a file system, which bulk memory is of the random access type, in which the data are organized in data blocks, where the data blocks are stored on the bulk memory on the basis of the rules of
15 the file system on a computer system requesting the data, where the data blocks contain organization information, arranged at the start and end of a data block, for managing the data blocks and contain the user information which is to be read, where cohesive
20 user information areas can be distributed over a plurality of data blocks which are then concatenated to one another using their organization information, where the data blocks are read from the bulk memory, whereupon the cohesive user information in one or more
25 data blocks is separated from the organization information and is continuously stored as related, according to its concatenation, in a buffer store and, in a subsequent step, decompressed using a data decompression method, the decompressed user information
30 is then split into uncompressed data blocks and is concatenated together on the basis of the rules of the file system with organization information about a read memory, and is provided for retrieval by the computer system in a read memory.

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12. A method for reading data from a bulk memory using a computer system, which computer system accesses the stored data in the bulk memory on the basis of the

rules of a file system, which bulk memory is of the random access type, in which the data are organized in data blocks, where the data blocks contain organization information, arranged at the start and end of a data block, for managing the data blocks and contain the user information which is to be read, where cohesive user information areas can be distributed over a plurality of data blocks which are then concatenated to one another using their organization information, where the data blocks are read from the bulk memory, whereupon the cohesive user information in one or more data blocks is separated from the organization information and is continuously stored as related, according to its concatenation, in a buffer store, where the user information is compressed compressed-data blocks whose structure is based on the rules of a file system and, in a subsequent step, is decompressed using a data decompression method, the decompressed data blocks structured on the basis of the rules of the file system on the computer system reading the data are then stored, organized on the basis of the rules of the file system, in a read memory for retrieval by the computer system.

13. The method for reading data from a bulk memory as claimed in claim 11 or 12, wherein the data compression method is a Huffmann, 1-Byterun, LhA, ZIP or RAR method.

14. The method for reading data from a bulk memory as claimed in one of claims 11 to 13, wherein the data compression method is stored in a programmable program store (58) provided for this purpose.

15. The method for reading data from a bulk memory as claimed in one of claims 11 to 14,

wherein

the data blocks (1, 2, 3) provided by the computer system (51) for storage on the bulk memory (60) are first buffer-stored in a write memory (53).

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16. The method for reading data from a bulk memory as claimed in one of claims 11 to 15,

wherein

the organization information is start, end and concatenation information (block pointer), particularly
10 arranged at the start and end of a data block.

17. The method for reading data from a bulk memory as claimed in one of claims 11 to 16,

15 wherein

the compressed-data blocks have the same structure as the data blocks.

18. The method for reading data from a bulk memory as
20 claimed in one of claims 11 to 17,

wherein

the bulk memory has a table holding information about the bulk memory's utilization by data blocks, this table being modified following use of the data
25 compression method and storing on the [lacuna] data blocks with the compressed user information, or the compressed-data blocks [lacuna] the bulk memory being modified in line with their new length and/or number and/or memory position.

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19. The method for reading data from a bulk memory as claimed in one of claims 11 to 18,

wherein

the data blocks have fixed lengths of 1024 bytes or a
35 multiple thereof.

20. The method for reading data from a bulk memory as claimed in one of claims 11 to 19,

wherein

the bulk memory is a hard disk.

21. An apparatus for compressing data which are
5 provided for storage by a computer system (51) on a
bulk memory (60) of the random access type, which
computer system provides the data for storage on a bulk
memory on the basis of the rules of a file system,
10 where the data are organized in data blocks, where the
data blocks contain organization information, arranged
at the start and end of a data block, for managing the
data blocks and contain the user information which is
to be stored, where cohesive user information areas can
15 be distributed over a plurality of data blocks which
are then concatenated to one another using their
organization information, where a sorting device (55)
is provided which continuously compiles the data
blocks, according to the order of the user information
20 which is contained in the data blocks and is
distributed over a plurality of data blocks, into a
total data packet, and a data compression device (57)
is provided which compresses the total data packet on
the basis of a data compression method and splits the
25 compressed data into data packets and stores these on
the bulk memory (60) as compressed-data blocks with
organization information for management and
concatenation thereof.

22. The apparatus for compressing data as claimed in
30 claim 21,
wherein
the sorting device (55), when compiling the total data
packet, separates the organization information in the
file system on the computer system (51) and
35 continuously compiles only the pure user data.

23. The apparatus for compressing data as claimed in
claim 21 or 22,

wherein

the compressed-data blocks' structure is organized on the basis of the rules of the file system on the computer system (51) delivering the data.

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24. The apparatus for compressing data as claimed in one of claims 21 to 23,

10 wherein

a write memory (53) is provided for buffer-storing the data blocks delivered by the computer system in the format of the file system.

15 25. The apparatus for compressing data as claimed in one of claims 21 to 24,

wherein

20 a method program store (58) is provided in which the compression method for the data compression device and/or the sorting code for the sorting device are stored.

26. The apparatus for compressing data as claimed in claim 25,

25 wherein the method program store is reversibly programmable.

27. The apparatus for compressing data as claimed in one of claims 21 to 26,

30 wherein

the bulk memory (60) is a hard disk and/or the apparatus is produced in the hard disk.

35 28. An apparatus for decompressing data which are stored on a bulk memory of the random access type, where the data are organized in data blocks, where the data blocks contain organization information, arranged at the start and end of a data block, for managing the

data blocks and contain the user information which is to be stored, where cohesive user information areas can be distributed over a plurality of data blocks which are then concatenated to one another using their organization information, where a decompression device is provided which continuously compiles the data blocks, separating the organization information, following reading from the bulk memory in accordance with their user information which they contain, as related on the basis of the concatenation thereof, and the data are then decompressed on the basis of a data decompression method, and the decompressed data are stored in a read memory, provided for this purpose, for reading by a computer system.

29. The apparatus for decompressing data as claimed in claim 28, wherein

the decompressed data are split into data packets, and these are stored in the read memory as data blocks with organization information for management, on the basis of the rules of the file system on the computer system retrieving the data, for reading by a computer system.

30. The apparatus for decompressing data as claimed in claim 28 or 29, wherein

a method program store (58) is provided in which the decompression method for the data decompression device (56) is stored.

31. The apparatus for decompressing data as claimed in claim 30, wherein

the method program store is reversibly programmable.

32. The apparatus for decompressing data as claimed in one of claims 28 to 31,

wherein
the bulk memory is a hard disk.

33. The apparatus for decompressing data as claimed in
5 one of claims 28 to 32,
wherein
the apparatus is produced in a hard disk or in a hard
disk controller.